

Appl. No. 09/886,675  
Amd. Dated July 5, 2005  
Reply to Office Action of May 3, 2005

**Amendment to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claim 1 (currently amended): An optical transmitter comprising:  
a coherent light source;  
a frequency control loop that measures and controls a transmission frequency of said coherent light source; and  
an optical filter having a controllable center frequency that filters a modulated signal derived from said coherent light source wherein all of a carrier of said modulated signal is within a passband of said optical filter; and  
wherein said frequency control loop tunes said controllable center frequency to be a fixed spacing away from said transmission frequency.

Claim 2 (original): The optical transmitter of claim 1 wherein said optical filter outputs a VSB signal.

Claim 3 (original): The optical transmitter of claim 1 further comprising:  
a modulator that amplitude modulates output of said coherent light source to transmit digital information.

Claim 4 (original): The optical transmitter of claim 3 wherein a bandwidth of said optical filter is between 0.4 and 0.7 times a bit rate equivalent bandwidth of said digital information.

Claim 5 (original): The optical transmitter of claim 3 wherein a difference between said transmission frequency of said coherent light source and said controllable center frequency is between 0.2 and 0.35 times a bit rate equivalent bandwidth of said digital information.

Claim 6 (currently amended): A WDM optical transmission system comprising:  
a plurality of optical transmitters, each of said optical transmitters comprising:

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a coherent light source;  
a frequency control loop that measures and controls a transmission frequency of said coherent light source; and  
an optical filter having a controllable center frequency that filters a modulated signal derived from said coherent light source; and  
wherein said wavelength control loop tunes said controllable center frequency to be a fixed spacing away from said transmission frequency wherein all of a carrier of said modulated frequency is within a passband of said bandpass filtering.

Claim 7 (original): The WDM optical transmission system of claim 6 further comprising:

within each of said plurality of optical transmitters, a modulator that amplitude modulates output of said coherent light source to transmit digital information.

Claim 8 (original): The WDM optical transmission system of claim 7 wherein, within each of said plurality of optical transmitters, a bandwidth of said optical filter is between 0.4 and 0.7 times a bit rate equivalent bandwidth of said digital information.

Claim 9 (original): The WDM optical transmission system of claim 7 wherein, within each of said plurality of optical transmitters, a difference between said transmission frequency of said coherent light source and said controllable center frequency is between 0.2 and 0.35 times a bit rate equivalent bandwidth of said digital information.

Claim 10 (original): The WDM optical transmission system of claim 7 wherein said transmission frequencies of said coherent light sources of said optical transmitters are spaced more closely than twice a bit rate equivalent bandwidth of said digital information.

Claim 11 (currently amended): A method for transmitting an optical signal comprising:  
generating a coherent light signal;  
measuring a transmission frequency of said coherent light signal;  
locking said transmission frequency to a desired transmission frequency;  
bandpass filtering a modulated signal derived from said coherent light signal; and

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controlling a center frequency of said bandpass filtering to be a fixed spacing away from said transmission frequency wherein all of a carrier of said modulated frequency is within a passband of said bandpass filtering.

Claim 12 (original): The method of claim 11 further comprising:  
modulating said coherent light signal so that a signal developed by said bandpass filtering comprises a VSB modulated signal carrying digital information.

Claim 13 (original): The method of claim 12 wherein bandpass filtering comprises bandpass filtering using a bandwidth of between 0.4 and 0.7 times a bit rate equivalent bandwidth of said digital information.

Claim 14 (original): The method of claim 12 wherein controlling said center frequency comprises maintaining spacing between said center frequency and said center frequency to be between 0.2 and 0.35 times a bit rate equivalent bandwidth of said digital information.

Claim 15 (currently amended): Apparatus for transmitting an optical signal comprising:  
means for generating a coherent light signal;  
means for measuring a transmission frequency of said coherent light signal;  
means for locking said transmission frequency to a desired transmission frequency;  
means for bandpass filtering a modulated signal derived from said coherent light signal wherein all of a carrier of said modulated signal is within a passband of said bandpass filtering;  
and  
means for controlling a center frequency of said bandpass filtering to be a fixed spacing away from said transmission frequency.

Claim 16 (original): The apparatus of claim 15 further comprising:  
means for modulating said coherent light signal so that a signal developed by said bandpass filtering means comprises a VSB modulated signal carrying digital information.

Claim 17 (original): The apparatus of claim 16 wherein said bandpass filtering means comprises means for bandpass filtering using a bandwidth of between 0.4 and 0.7 times a bit rate equivalent bandwidth of said digital information.

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Claim 18 (original): The apparatus of claim 16 wherein said controlling means comprises means for maintaining spacing between said center frequency and said center frequency to be between 0.2 and 0.35 times a bit rate equivalent bandwidth of said digital information.